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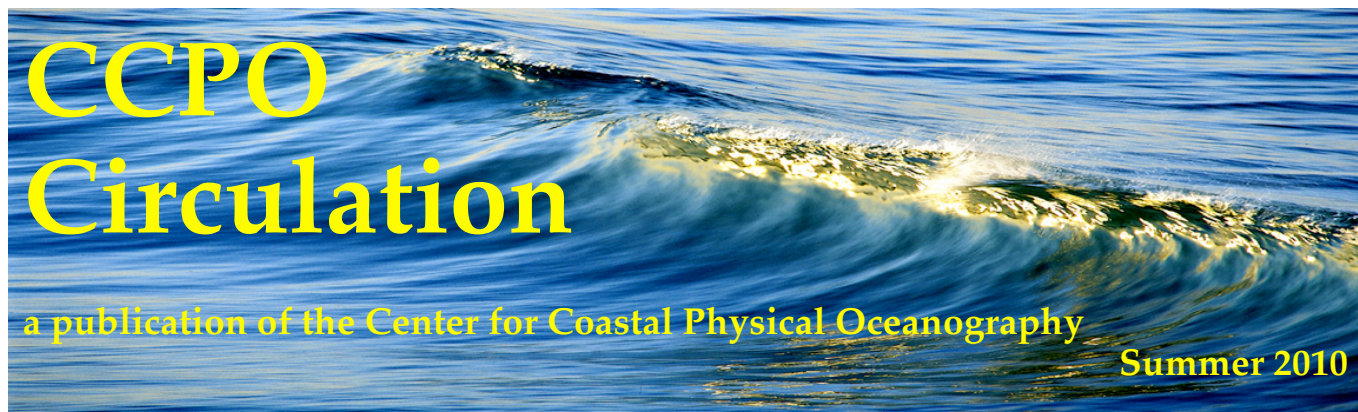
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CCPO RESEARCHERS FOCUS ON THE ROSS SEA

EILEEN E. HOFMANN, JOHN M. KLINCK, AND MIKE DINNIMAN

Vol. 16, No. 2

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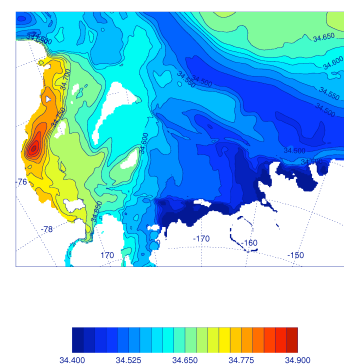
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CCPO scientists and graduate students have an active involvement in a variety of Antarctic research projects. Many of these projects have focused on aspects of the oceanography of the western Antarctic Peninsula. About ten years ago, CCPO scientists (Mike Dinniman, John Klinck, and Eileen Hofmann) began a collaboration with Walker Smith from the Virginia Institute of Marine Science (VIMS) that provided the opportunity to work in the Ross Sea region of the Antarctic (Fig. 1). This NSF-funded study was part of the synthesis and modeling activities of the Joint Global Ocean Flux Study program and focused on understanding and comparing nutrient dynamics in the Ross Sea with those along the western Antarctic Peninsula (WAP). As part of this project, Mike Dinniman and John Klinck used the Regional Ocean Modeling System (ROMS) to develop a circulation model for the Ross Sea (Dinniman et al., *Deep-Sea Research II*, 2003). In a subsequent collaborative study, the Ross Sea circulation model was expanded to include thermodynamically active ice shelves, which is particularly important for the Ross Sea because of the presence of the Ross Ice Shelf, which is the largest ice shelf (about the size of France) in the Antarctic. This model was used to investigate changes in Ross Sea circulation and water mass characteristics that occur in response to variability in sea ice cover and the presence of icebergs (Dinniman et al., *Journal of Geophysical Research*, 2007) and to compare differences and similarities in the dynamics controlling the distribution of Circumpolar Deep Water (CDW) in the Ross Sea and western Antarctic Peninsula (Dinniman et al., *Deep-Sea Research II*, in press).

A



B

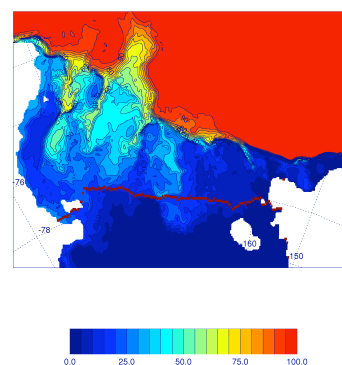


Figure 1. Simulated salinity (A) and dye (B) distributions at 300 m from the Ross Sea circulation model. The dye is a proxy for Circumpolar Deep Water, which intrudes into the Ross Sea along the shelf break.

These comparisons show that there is more vigorous mixing of the CDW with the surface waters in the Ross Sea, which removes more heat from the CDW and thus partially explains why the ice shelves along the WAP have greater basal melt rates than the Ross Ice Shelf. This difference in vertical mixing also likely leads to differences in the supply of nutrients from the CDW into the upper water column, and thus has an impact on surface biogeochemical processes.

The simulations with the Ross Sea circulation model are providing realistic representations of the temperature, salinity, and circulation of this region (Fig. 1). One lingering issue for the Ross Sea modeling effort has been the availability of data sets with sufficient space and time resolution to evaluate the reality of the high-resolution simulations. The desire to improve model-data comparisons resulted in a collaborative proposal with Walker Smith and Marjorie Friedrichs (both at VIMS) that is testing the feasibility of using gliders, instrumented with salinity, temperature, optical, and fluorescence sensors, in the Ross Sea to obtain quasi-synoptic observations in and around the Ross Sea Polynya. A second collaborative Ross Sea data-gathering project was developed with Dan Costa and colleagues from the University of California, Santa Cruz. In this project, Weddell seals are being outfitted with satellite tags that include conductivity-temperature-depth sensors. The seal-derived observations are similar to those obtained from the gliders in that both are Lagrangian measurements that provide details of the thermohaline properties of the water column.



Figure 2. Mike Dinniman with iRobot glider in Seattle, WA.

The gliders will be deployed in November 2010 and preparations for this have been underway for about one year. In September 2009, John Klinck and Mike Dinniman completed the iRobot Seaglider training class (Fig. 2) at the University of Washington, Seattle, WA, where they learned to deploy, program, and operate the glider that will be used in the Ross Sea. Mike Dinniman will be part of the VIMS glider deployment team and will be making his first trip to the Antarctic this November.

Dan Costa's group will deploy satellite tags on the Weddell seals (*Leptonychotes weddellii*) later in the 2010/11 austral summer (Fig. 3). The seals will provide continued data acquisition after the gliders have been retrieved in February 2011. This multifaceted, extended project combines the efforts of several groups using very different tools to analyze the processes that control the physical and ecological processes in the Ross Sea, a remote and difficult region to sample. The gliders and seals will return information from a large section of the Ross Sea and should provide sufficient temporal coverage to allow us to determine the seasonal evolution of the physical conditions that influence the summer phytoplankton bloom in the Ross Sea, which varies from year to year. The Ross Sea, like many areas of the Antarctic, is responding to climate change. The availability of models that provide realistic simulations of environmental and biological conditions will provide frameworks for testing scenarios about the consequences of these changes in the Ross Sea.



Figure 3. Weddell seal outfitted with a satellite-linked dive recorder. Photograph courtesy of Dr. Dan Costa, University of California, Santa Cruz.

Notes from the Director
John M. Klinck

Where did the summer go? I thought that it just began. Looking back on all of the accomplishments at CCPO, it is clear that everyone has been very busy. It is easy to see from the list of papers and presentations by folks at CCPO that lots of work is being done. Congratulations to Malcolm, who earned the NSF development award. Then there is the multi-faceted work being done (and being planned) in the Ross Sea. There was even time to host an international modeling meeting. All of the accomplishments make CCPO shine. Keep up the great work.

Chesapeake Inundation Prediction System (CIPS): Flood Forecasts for Coastal-Bay-Estuary Resiliency to Storm Surge

By: Elizabeth Smith, Southeastern Universities Research Association (lsmith@sura.org)
Together with Colleagues from the Chesapeake Inundation Prediction System Team

The Chesapeake Inundation Prediction System (CIPS), a showcase of collaboration among university scientists, the private sector, and the government, is being developed to provide accurate and reliable on-land flooding forecasts for tropical cyclones and extra-tropical wind systems such as nor'easters, for the Chesapeake Bay region. The objective of CIPS is to produce "actionable information" of the on-land areas to be flooded that the National Weather Service can incorporate in their operational services to support emergency managers and other decision-makers. To develop this forecast guidance system, the CIPS team utilizes:

- An ensemble of atmospheric models as forcing for two hydrodynamic models,
- Integrated hydrologic model river discharge and storm surge for a total water level forecast,
- Geospatially modeled and visualized on-land flooding at the street-level scale,
- Validation of the inundation water depth with rapidly deployed on-land gauges,
- Extensive outreach, communication and user engagement, and
- Economic assessment process throughout the term of the project.

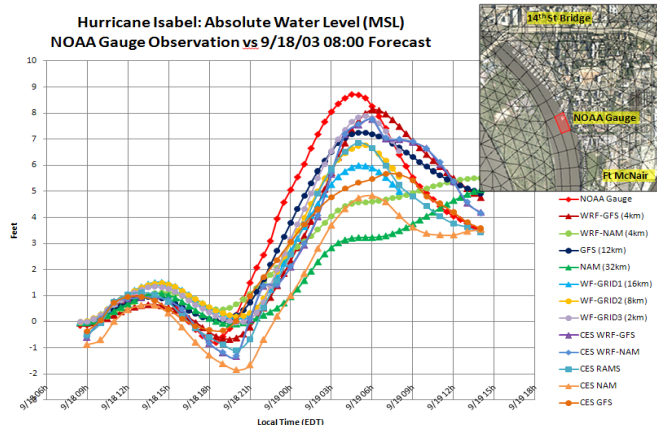
The benefits of the CIPS approach to modeling and prediction are demonstrably improved accuracies of storm-related inundation and quantitative estimates of forecast uncertainties. This method of ensemble modeling, in which multiple numerical predictions employing slightly different forcing functions are used to drive the hydrodynamic models, is the key to quantifying uncertainty in the models. The figure shows an example of a CIPS visualization for a location in the flood-prone upper Potomac River for Hurricane Isabel. Flooding depth and time is shown for the NOAA water level gauge and for each member of the model ensemble.

A significant accomplishment of CIPS is the completion of the prototype, end-to-end system and the application of the system to demonstrate CIPS in a rapid hindcast mode for the November 2009 Nor'Easter storm (also known as Nor'Ida) off the mid-Atlantic states that produced major flooding in Hampton Roads. In advance of Nor'Ida, the USGS Water Science Centers in MD and VA deployed several on-land water level and pressure sensors. These sensors reported observations crucial to the validation and evaluation of the CIPS forecasted on-land water levels.

CIPS observational and model inputs are compliant with U.S. Integrated Ocean Observing System Data Management and Communications (IOOS DMAC) standards. All observations are available in data integration framework sensor observation service (DIF SOS). The geospatial and visualization modeling is in conformance with Open Geospatial Consortium standards, and model data are available through a Thredds server and web map service (WMS).

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The Chesapeake Bay Observing System (CBOS) at Old Dominion University, UMCES Chesapeake Biological Laboratory, and the Chesapeake Research Consortium (CRC) have been conducting a dynamic outreach program with emergency managers to assess the value of this system for advanced planning, real-time response and recovery. The CIPS end-to-end system and architecture can be reproduced readily in other areas for real-time coastal flood forecasting. The architecture requires an ensemble of wind fields, one or more hydrodynamic models, and a visualization capability for the specific areas of interest. Many of the concepts and lessons learned from developing CIPS can be applied to the new areas, many of which already possess robust modeling capabilities that could be brought into a team. CIPS was funded by the US IOOS Program. For more information, please contact Elizabeth Smith at lsmith@sura.org or 757-683-5842.



Example of a CIPS output showing flooding depth and time at a location by each atmospheric model of the ensemble forecast.

CCPO GRADUATE RESEARCH ASSISTANT PROFILES

ASHGAN ABOUTALEB

Ashgan AbouTaleb received a Bachelor's degree in Physics and Astronomy with honors from Cairo University in Egypt. Afterwards, she became a teaching assistant at the Department of Astronomy and Meteorology at Cairo University.



One year later, Ashgan completed her diploma in Space Science and then earned a Master's degree in Space Physics as the department's first graduate student in this field.

She received a scholarship from the French Culture Center in Cairo as a research visitor to the Centre d'étude des Environnements Terrestre et Planétaires (CETP) in Velizy, France for 6 months. In the fall of 2008, Ashgan was accepted by Old Dominion University as a doctoral student in Physical Oceanography at CCPO.

Currently, she is working on her Ph.D. degree in Oceanography under the supervision of **Chester Grosch**, CCPO professor. Her research focuses on turbulence dynamics using LES (Large Eddy Simulations).

ALEXANDRA MATTHEUS

Alexandra Mattheus is a CCPO graduate student from Florida. In 2007, she earned a Bachelor of Science degree in Ecological Biology from Southeastern Louisiana University. At Old Dominion University, Alex works as a Teaching Assistant for an Introduction to Oceanography

course. She teaches three labs a semester that meet once a week for two hours at a time. She enjoys teaching others about science and has learned much herself from teaching in regards to public speaking, group motivation, and presentation skills.

Being a non-thesis Master's graduate student in the Ocean, Earth and Atmospheric Sciences Department at ODU, she is required to obtain ship and field work experience. Alex completed these requirements by volunteering at Rutgers University's Haskin Shellfish Research Laboratory (HSRL) in Port Norris, New Jersey and also by helping fellow graduate students conduct their field work here locally in Norfolk.



HSRL is located in an oystering town on the southern tip of New Jersey, on the Delaware Bay. During the summer months, HSRL conducts oyster bed re-surveys to get a general idea of any changes in the oyster bed conditions along the Delaware Bay. The re-survey work at HSRL requires early mornings and long hours, which she found to be a satisfying change from studying text and attending lectures.

Upon earning a Master's degree in Oceanography under the supervision of CCPO professor, **Eileen Hofmann**, Alex plans to return to the Gulf Coast to participate in Gulf Coast and wetland preservation efforts. She also plans to continue her education in earth and animal sciences.

CCPO Researcher Earns Career Development Award

Malcolm Scully, CCPO assistant professor, is a recipient of the prestigious Faculty Early Career Development (CAREER) award from the National Science Foundation. The five-year, \$750,000 project, "Career: Physical Modulation of Dissolved Oxygen in Chesapeake Bay", will consist of extensive field tests in support of his research of oxygen-depleted areas of the Chesapeake Bay.



Appointments

Hofmann, E.E., Chair, IMBER science steering committee, January 2010-December 2012.

Hofmann, E.E., North Pacific Research Board Committee of Visitors, April 2010-March 2011.

Publications

- Barange, M., J.G. Field, R.P. Harris, **E.E. Hofmann**, R.I. Perry, and F.E. Werner (Eds.), *Marine Ecosystems and Global Change*, Oxford University Press, 412 pp., 2010.
- Bender, M.A., T.R. Knutson, **R.E. Tuleya**, J.J. Sirutis, G.A. Vecchi, S.T. Garner, and I.M. Held, Modeled Impact of Anthropogenic Warming on the Frequency of Intense Atlantic Hurricanes, *Science*, 327(5964), 454-458, DOI: 10.1126/Science.1180568, 22 January 2010.
- Chapman, E.W., **E.E. Hofmann**, D.L. Patterson, and W.R. Fraser, The effects of variability in Antarctic krill (*Euphausia superba*) spawning behavior and sex/maturity stage distribution on Adélie penguin (*Pygoscelis adeliae*) chick growth: A modeling study, *Deep-Sea Research II*, 57(7-8), 543-558, doi:10.1016/j.dsr2.2009.10.005, 2010.
- deYoung, B., F.E. Werner, H. Batchelder, F. Carlotti, Ø. Fiksen, **E.E. Hofmann**, S. Kim, M.J. Kishi, and H. Yamazaki, Dynamics of marine ecosystems: integration through models of physical-biological interactions, *Marine Ecosystems and Global Change*, M. Barange, J.G. Field, R.P. Harris, **E.E. Hofmann**, R.I. Perry, and F.E. Werner (Eds.), Oxford University Press, Chapter 5, 89-128, 2010.
- Ezer, T.** and L.-Y. Oey, The role of the Alaskan Stream in modulating the Bering Sea climate, *Journal of Geophysical Research*, C04025, doi:10.1029/2009JC005830, 2010.
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- Hofmann, E.E.**, M. Barange, J.G. Field, R.P. Harris, R.I. Perry, and F.E. Werner, Marine ecosystems and global change: a synthesis, *Marine Ecosystems and Global Change*, M. Barange, J.G. Field, R.P. Harris, **E.E. Hofmann**, R.I. Perry, and F.E. Werner (Eds.), Oxford University Press, Chapter 11, 323-336, 2010.
- Hofmann, E.E.**, D. Bushek, S. Ford, X. Guo, D. Haidvogel, D. Hedgecock, **J. Klinck**, C. Milbury, **D. Narváez**, E. Powell, Y. Wang, Z. Wang, J. Wilkin, and L. Zhang, Understanding how disease and environment combine to structure resistance in estuarine bivalve populations, *Oceanography*, 22(4), 212-231, 2009.
- Klinck, J.M.** and **M.S. Dinniman**, Exchange across the shelf break at high southern latitudes. *Ocean Science*, 6, 513-524, doi:10.5194/os-6-513-2010, 2010.
- Loeb, V., **E.E. Hofmann**, **J.M. Klinck**, and O. Holm-Hansen, Hydrographic control of the marine ecosystem in the south Shetland-Elephant Island and Bransfield Strait region, *Deep-Sea Research II*, 57(7-8), 519-542, doi: 10.1016/j.dsr2.2009.10.004, 2010.
- Oey, L.-Y., **T. Ezer**, C.-R. Wu, and Y. Miyazawa, Editorial- International Workshop on Modeling the Ocean (IWMO) special issue Part-1, *Ocean Dynamics*, 60(2), 299-300, 2010.
- Saramul, S.** and **T. Ezer**, Tidal-driven mixing processes in a coastal ocean model with wetting and drying, *Ocean Dynamics*, 60(2), 461-478, 2010.
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- Smith, Jr., W.O., **M.S. Dinniman**, S. Tozzi, G.R. DiTullio, O. Mangoni, M. Modigh, and V. Saggiomo, Phytoplankton photosynthetic pigments in the Ross Sea: Patterns and relationships among functional groups, *Journal of Marine Systems*, 82, 177-185, doi:10.1016/j.jmarsys.2010.04.014, 2010.
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Presentations

- Ballerini, T.**, D. Ainley, K. Daly, **E. Hofmann**, M. Marrari, C. Ribic, W. Smith, and J. Steele, An analysis of consequences of modifications to a Southern Ocean food web, 2010 Ocean Sciences Meeting, Portland, OR, February 22-26, 2010.
- Ballerini, T.**, D. Ainley, K. Daly, **E. Hofmann**, M. Marrari, C. Ribic, W. Smith, and J. Steele, An analysis of consequences of modifications to a Southern Ocean food web (poster), Cameo End-to-End Modeling Workshop, Woods Hole, MA, April 18-22, 2010.
- Costa, D.P., D.E. Crocker, M.A. Fedak, M.E. Goebel, B. McDonald, L.A. Hückstädt, **E.E. Hofmann**, **J.M. Klinck**, and **M.S. Dinniman**, Climate Change and Habitat Selection of Seals in the Western Antarctic Peninsula, 2010 Ocean Sciences Meeting, Portland, OR, February 22-26, 2010.
- Dinniman, M.S.** and **J.M. Klinck**, Wind Effects on Circumpolar Deep Water Intrusions on the West Antarctic Peninsula Continental Shelf, 2010 Ocean Sciences Meeting, Portland, OR, February 22-26, 2010.
- Engel, P.A., W.R. Geyer, and **M.E. Scully**, Frictional hydraulics generate along-channel variability of tidal pumping in a partially mixed estuary, 2010 Ocean Sciences Meeting, Portland, OR, February 22-26, 2010.
- Ezer, T.**, Inundation modeling and remote sensing in Cook Inlet with applications for morphology change and Beluga whales movements, Cook Inlet Modelers Workshop, Anchorage, AK, March 29-30, 2010.
- Ezer, T.** and L.-Y. Oey, The Bering Sea climate and the Alaskan Stream: A numerical modeling study, paper #IT35C-16, 2010 Ocean Sciences Meeting, Portland, OR, February 22-26, 2010.
- Ezer, T.** and L.-Y. Oey, Numerical simulations reveal the role of the Alaskan Stream in modulating the Bering Sea climate, 2nd International Workshop on Modeling the Ocean (IWMO-2010), Norfolk, VA, May 24-26, 2010.
- Galton-Fenzi, B.K., **M.S. Dinniman**, and J. Hunter, The pressure gradient force at the front of ice shelves in sigma-coordinate ocean models, 2nd International Workshop on Modeling the Ocean (IWMO-2010), Norfolk, VA, May 24-26, 2010.

- Garner, T.**, Near Real-Time Observations of Surface Currents Using High Frequency RADAR, VIMS workshop: Using Observing Systems to Address Coastal Management Issues, Gloucester Point, VA, January 27, 2010.
- Garner, T.**, Surface Current Mapping in the Lower Chesapeake Bay, Chesapeake Modeling Symposium, Annapolis, MD, May 10-11, 2010.
- Gatski, T.B.**, Numerical Simulations of High-Speed Wall-Bounded Flows, Symposium on High Accuracy Flow Simulations, École Polytechnique Federale de Lausanne, Lausanne, Switzerland, February 15-16, 2010.
- Gatski, T.B.**, Probing High-Speed Wall-Bounded Flows Using DNS, 45th Symposium of Applied Aerodynamics, Polytech'Marseille, Marseille, France, March 22-24, 2010.
- Gatski, T.B.**, Heat Transfer and Shock Impingement Effects on a Supersonic Boundary Layer: DNS Study, 2nd International Workshops on Advances in Computational Mechanics, Yokohama, Japan, March 29-31, 2010.
- Gatski, T.B.**, Modeling and Probing Turbulent Flows with CFD, Symposium in Honor of D. Brian Spalding - 2010 Recipient of the Benjamin Franklin Medal in Mechanical Engineering, Villanova University, Villanova, PA, April 28, 2010.
- Gatski, T.B.**, Influence of Wall Cooling on the Statistics of a Supersonic Turbulent Boundary Layer, 8th International ERCOFTAC Symposium on Engineering Turbulence Modelling and Measurements, Marseille, France, June 9-11, 2010.
- Gatski, T.B.**, Statistical Characteristics of Supersonic Developing Boundary Layer Flow from DNS Data, School of Aerospace, Tsinghua University, Beijing, China, May 24, 2010.
- Gatski, T.B.**, A Hybrid RANS-LES Model Based on Temporal Filtering, School of Aerospace, Tsinghua University, Beijing, China, May 25, 2010.
- Hofmann, E.E.**, Physical-biological coupling in marine ecosystems and implications for food web models (plenary presentation), End-to-End Modeling Workshop, Woods Hole, MA, April 18-22, 2010.
- Hofmann, E.E.**, Understanding Disease Resistance in Estuarine Populations and Response to Climate Change, Applied Mathematics and Statistics Departmental Seminar, University of California, Santa Cruz, May 17, 2010.
- Hofmann, E.E.**, Southern Ocean Food Webs and Climate Change, Ecology and Evolutionary Biology Departmental Seminar, University of California, Santa Cruz, May 19, 2010.
- Hofmann, E.E., M.S. Dinniman, and J.M. Klinck**, A model study of how changes in winds affect Circumpolar Deep Water transport and ice shelf basal melt along the west Antarctic Peninsula, SCAR Fourth Open Science Conference, Buenos Aires, Argentina, August 3-6, 2010.
- Hofmann, E.E.**, L. Maddison, and S. Beauvais, The IMBER Programme (poster), IPY Oslo Science Conference 2010, Oslo, Norway, June 8-11, 2010.
- Hofmann, E.E.**, E.J. Murphy, R.D. Cavanagh, and N.M. Johnston, Synthesis of Southern Ocean food webs (invited oral presentation), IPY Oslo Science Conference 2010, Oslo, Norway, June 8-11, 2010.
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- Hofmann, E.E., J.M. Klinck, D. Narváez, D. Bushek, S. Ford, E. Powell, X. Guo, D. Haidvogel, J. Wilkin, and D. Hedgecock**, How do oyster populations respond to persistent disease pressure?, Ecology of Infectious Diseases Annual PI Meeting, Atlantic City, NJ, March 23-25, 2010.
- Hückstädt, L., B. McDonald, **A. Piñones, M.S. Dinniman, E.E. Hofmann, M.E. Goebel, D.E. Crocker, and D.P. Costa**, Habitat partitioning of two seal species in the Western Antarctic Peninsula, 2010 Ocean Sciences Meeting, Portland, OR, February 22-26, 2010.
- Kamel, M. and J. Klinck**, The effect of an offshore wind turbine array on circulation in an idealized Virginia coastal ocean, 2nd International Workshop on Modeling the Ocean (IWMO-2010), Norfolk, VA, May 24-26, 2010.
- Klinck, J.M.**, D.P. Costa, **M.S. Dinniman, and E.E. Hofmann**, Using instrumented seals to observe spatial and temporal variations in environmental conditions on the west Antarctic Peninsula, 2010 Ocean Sciences Meeting, Portland, OR, February 22-26, 2010.
- Klinck, J.M.**, D.P. Costa, **M.S. Dinniman, and E.E. Hofmann**, Using instrumented seals to observe spatial and temporal variations in environmental conditions on the west Antarctic Peninsula during 2005 to 2009, SCAR Fourth Open Science Conference, Buenos Aires, Argentina, August 3-6, 2010.
- Liu, H. and **T. Ezer**, Monitoring tidal movements in Cook Inlet, Alaska, using the integration of remote sensing data, GIS and inundation models, paper #GO35D-02, 2010 Ocean Sciences Meeting, Portland, OR, February 22-26, 2010.
- Liu, H. and **T. Ezer**, Integrating inundation models, Landsat satellite imagery, and GIS to assess tidal movements in Cook Inlet, Alaska, 2nd International Workshop on Modeling the Ocean (IWMO-2010), Norfolk, VA, May 24-26, 2010.
- Martinat, G., C. Grosch, Y. Xu, and A. Tejada-Martinez**, LES of turbulent shear flow and pressure driven flow on shallow continental shelves, 2nd International Workshop on Modeling the Ocean (IWMO-2010), Norfolk, VA, May 24-26, 2010.
- Narváez, D., J.M. Klinck, E. Powell, E.E. Hofmann, J. Wilkin, and D.B. Haidvogel**, Effects of Behavior and Growth on Dispersal of Oyster Larvae in Delaware Bay: A Numerical Study (poster), 2010 Ocean Sciences Meeting, Portland, OR, February 22-26, 2010.
- Narváez, D., J.M. Klinck, E. Powell, E.E. Hofmann, J. Wilkin, and D.B. Haidvogel**, Modeling the environmental effects on the settlement of oyster larvae (*Crassostrea virginica*) in Delaware Bay, Benthic Ecology Meeting, Wilmington, NC, March 10-13, 2010.
- Narváez, D., J.M. Klinck, E. Powell, E.E. Hofmann, J. Wilkin, and D.B. Haidvogel**, Modeling the dispersion of oyster larvae: Effects of biological and physical processes, Ecology and Evolution of Infectious Diseases Annual PI Meeting, Atlantic City, NJ, March 22-25, 2010.
- Narváez, D., J.M. Klinck, E. Powell, E.E. Hofmann, J. Wilkin, and D.B. Haidvogel**, Coupling an Individual-Based Model to the Regional Ocean Model System (ROMS): Application on larval dispersal studies, ROMS (Regional Ocean Modeling System) User Workshop, Honolulu, HI, April 5-8, 2010.
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- Piñones, A., E.E. Hofmann, K.L. Daly, P.H. Wiebe, M.S. Dinniman, and J.M. Klinck**, Remote and local connectivity of Antarctic krill (*Euphausia superba*) populations along the western Antarctic Peninsula, 2010 Ocean Sciences Meeting, Portland, OR, February 24, 2010.
- Rii, Y.M., M. Cape, E. Del Ser Lorente, J. Dorman, K.J. Kroeker, B.J. Lindsey, D.A. Narváez, R. Wilson, J. Fiechter, and T.M. Powell**, Effects of Prey Availability on the Dispersal of Adult Euphausiid Populations off the Oregon Coast: A Numerical Study (poster), 2010 Ocean Sciences Meeting, Portland, OR, February 22-26, 2010.
- Saramul, S.**, Development of Circulation Model for the Upper Gulf of Thailand (UGoT), 2010 Student Capstone Conference, VMASC, Suffolk, VA, April 8, 2010.
- Saramul, S. and T. Ezer**, Tidal-driven dynamics and mixing processes in a coastal ocean model with wetting and drying, 2nd International Workshop on Modeling the Ocean (IWMO-2010), Norfolk, VA, May 24-26, 2010.
- Scully, M.E.**, Wind modulation of Hypoxia in Chesapeake Bay, Chesapeake Bay Program, Modeling Quarterly Review, Annapolis, MD, April 1, 2010.
- Scully, M.E.**, Wind modulation of Hypoxia in Chesapeake Bay, Chesapeake Modeling Symposium, Annapolis, MD, May 10-11, 2010.
- Scully, M.E. and W.R. Geyer**, Length scale dependence of mixing efficiency in a stratified estuary, 2010 Ocean Sciences Meeting, Portland, OR, February 22-26, 2010.
- Smith, E.**, Session Chair for “Exceptional Atmospheric and Hydrodynamic Processes and Events: Observations, Models, Forecasts, Response and Communication”, Chesapeake Modeling Symposium 2010, Annapolis, MD, May 10-11, 2010.
- Tian, T.**, Model-based analyses of nutrient and carbon cycling on the U.S eastern continental shelf (poster), 2010 Ocean Sciences Meeting, Portland, OR, February 22-26, 2010.
- Tuleya, R.E.**, Evolution of the GFDL hurricane model in research and transition to NMC operations - 1st regional dynamic hurricane model for operations, EMC/MMM/DTC Joint Hurricane Workshop, NCAR Foothills Laboratory, Boulder, CO, February 22-23, 2010.
- Tuleya, R.E.**, HWRF Physics, EMC/MMM/DTC Joint Tutorial for Hurricanes. NCAR Foothills Laboratory, Boulder, CO, February 22-26, 2010.
- Tuleya, R.E. and Y. Wu**, Test results using the NOAA LSM in the operational HWRF system, 29th Conference on Hurricanes and Tropical Meteorology, Tucson, AZ, May 10-14, 2010.
- Tuleya, R.E., Y. Kwon, V. Tallapragada, Z. Zhang, Y. Wu, Q. Liu, J. O’Connor, and W. Lapenta**, Impacts of Land Effects and Improvements in Modeling Landfall Using HWRF, 64th Interdepartmental Hurricane Conference, Savannah, GA, March 1-4, 2010.

CCPO SEMINAR SERIES

During the academic year, CCPO invites distinguished scientists to present seminars, which take place in Room 3200, Innovation Research Building 1, Old Dominion University on Mondays at 3:30 PM. A reception is held prior to the seminar at 3:00 PM. Eileen Hofmann, professor of oceanography, coordinates the seminar series. Specific topics are announced one week prior to each seminar; abstracts can be found at www.ccpo.odu.edu/seminars.html.

Fall 2010 seminar speakers

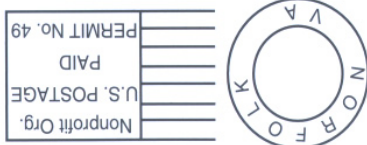
September 13	Aaron Beck, Virginia Institute of Marine Science
September 20	Ruoying He, North Carolina State University
September 27	Susan Roberts, Ocean Studies Board, National Research Council
October 4	Mike Dinniman, CCPO
October 18	Chunyan Li, Louisiana State University
October 25	Piers Chapman, Texas A&M University
November 1	Adrian Gheorghe, Dept. of Engineering Management and Systems Engineering, ODU
November 8	Helga Gomes, Bigelow Laboratory for Ocean Sciences
November 15	Tom Ihde, NOAA Chesapeake Bay Office
November 22	Richard Zimmerman, Dept. of Ocean, Earth and Atmospheric Sciences, ODU
November 29	Jackie Grebmeier, UMCES Chesapeake Biological Laboratory

CCPO Professor Organizes International Modeling Workshop

The 2nd International Workshop on Modeling the Ocean (IWMO) was hosted May 24-26, 2010 at Old Dominion University. **Tal Ezer**, CCPO professor, organized the meeting, which was attended by 50 scientists from 13 countries. Encouraging collaboration between Far East ocean scientists and those in America and Europe was the goal of the workshop. One workshop session was devoted to providing the opportunity for international graduate students to present their research. CCPO students, **Mahmoud Kamel** and **Suriyan Saramul**, presented some of their work. Participants attended a reception at CCPO on May 24 and enjoyed a dinner on May 25 at the Pagoda in Downtown Norfolk (see photo at right).



MOVING ON....Research scientist, **Jose L. Blanco**, has left CCPO to head to the city of Iquique (20° 12.15'S - 70° 8.47'W), located in Northern Chile, as a Research Scientist at the fisheries company, CORPESCA S.A., and as a senior consultant for the Northern Fisheries Research Institute (Instituto de Investigación Pesquera del Norte S.A.), also in Iquique. He will use operational models to optimize the anchovy fisheries fleet, study the environment and pelagic resources that can support a sustainable fishery, and explore future development areas, like offshore and/or land aquaculture, and marine renewable energy. Jose received his Ph.D. from Old Dominion University in 2004 and was a postdoctoral research associate at CCPO from 2005-07 and a Research Scientist since 2007. He will continue working as consultant for ODU on several projects related to offshore wind energy and other future initiatives. We wish him the best in his new position!



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